

IN THE DRAWING

Please amend the drawing by replacing the drawing sheet that contains Figs. 1-3 and the drawing sheet that contains Figs. 4-6 with the corresponding replacement sheets appended hereto in Appendix A.

REMARKS

Claims 1-17 are pending in the application. Claims 1, 4, 6, 12 and 15 have been amended. Reconsideration of this application is respectfully requested.

The Office Action has objected to the drawing because Figs. 1-4 should be designated with the legend, "Prior Art". The drawing has been amended with the Replacement Sheets of Appendix A as suggested by the Office Action, subject to the approval of the Examiner. Therefore, it is submitted that the objection to the drawing is obviated.

The Office Action rejects claims 1, 2, 9, 10, 12, 13 and 17 under 35 U.S.C 103(a) as unpatentable over U.S. Patent No. 5,245,460 to Allen et al., hereafter Allen, in view of U.S Patent No. 6,424,442 to Gfeller et al., hereafter Gfeller.

This rejection is obviated by the amendment. Independent claims 1 and 12 have been amended to recite that the transmitter has a single light source. Independent claim 1 has been further amended to recite an optical structure that converts light from the single light source to a plurality of collimated light beams and to project the light beams as an array of diffusing spots on to a reflecting surface. Independent claim 12 has been further amended to recite the steps of converting light from the light source to a plurality of collimated light beams and projecting the light beams as an array of diffusing spots on to a reflecting surface.

Allen discloses a communication system in which two or more residents on a network communicate over an infrared medium. Allen provides an optical system to solve the problem of residents whose transceivers cannot communicate with one another because their respective illuminations on a reflective surface, e.g., a ceiling, do not overlap. Allen solves the problem with an alignment procedure that is performed at initialization time to assure that each resident can communicate with all of the others. This procedure uses a transmitter 20 that has a plurality of light sources that each

transmits a portion of a single illumination spot 28 on a ceiling. The light sources are then switched on and off in the procedure to vary the size of the illumination spot 28 to provide information that helps the residents align their respective transceivers for communication with all the other transceivers. Allen does not disclose or teach that this procedure is used for actual communications among the residents.

Allen lacks many of the elements/steps of amended independent claims 1 and 12. Allen employs a plurality of light sources to change the size of a single illumination spot in the alignment procedure. Amended independent claims 1 and 12 recite a single light source and an optical structure for the conversion of the light to a plurality of collimated light beams that are projected as an array of diffusing spots on to a reflecting surface. Thus, Allen lacks a single light source, an optical structure and an array of diffusing spots on the reflecting surface as recited in amended independent claims 1 and 12.

The Examiner admits that Allen lacks a receiver that comprises a plurality of receiver elements wherein each receiver element has an independent field of view that is in a line of sight of at least one of said diffusing spots as recited in amended independent claims 1 and 12. The Examiner contends that Gfeller supplies Allen's receiver deficiency. This contention is traversed.

The Examiner cites Gfeller's Figs. 1-16 and column 7, lines 47-65, in support of this contention. The column 7 citation describes the system of Figs. 14-16, which are based on the transmitter of Fig. 3. The transmitter of Fig. 3 has a plurality of LED light sources mounted on a tilted surface in a tubular dome shaped housing 12. Thus, Gfeller, like Allen, lacks a single light source as recited in amended independent claims 1 and 12.

Housing 12 includes a diffuser that enlarges the beams of the individual light sources, i.e., scatters the beams in a 360° manner. The result is illumination of the entirety of all reflective surfaces in the room. That is, the beams are not shaped to illuminate a spot or an array of spots. Thus, Gfeller, like Allen, lacks an optical structure and an array of diffusing spots as recited in amended independent claims 1 and 12.

Since Gfeller does not illuminate a spot, the fields of view of Gfeller's receiver elements 143 (shown in Figs. 14-16) cannot be in a line of sight of at least one of the diffusing spots as recited in amended independent claims 1 and 12.

The Examiner further contends that it would have been obvious to one of ordinary skill in the art to incorporate Gfeller's receiver into Allen's system. This contention is traversed.

The combination of Allen and Gfeller lacks the transmitter and the receiver as claimed in amended independent claims 1 and 12 as discussed above. Therefore, the combination of Allen and Gfeller does not teach the receiver recited in amended independent claims 1 and 12.

Moreover, there is no motivation for one of ordinary skill in the art to combine Allen and Gfeller. The proposed combination of Allen modified by Gfeller cannot render Allen unsatisfactory for its intended purpose. See M. P. E. P., Section 2143.01 V. The purpose of Allen's procedure is to initialize the transceivers of all the residents on a local network so that their respective transceivers can communicate with one another. In Gfeller's system, the transmitted light is scattered such that the reflected light is available to all receivers. Thus, there is no need to initialize Gfeller's transceivers. In fact, this is listed as an advantage of Gfeller at column 4, line 39. Therefore, the proposed modification would eliminate the need for Allen's initialization, thus rendering Allen's procedure unsatisfactory for its intended purpose of initialization.

The proposed combination of Allen modified by Gfeller cannot change Allen's principle of operation. See M. P. E. P., Section 2143.01 VI. Allen's initialization procedure is based on aligning the various transceivers with an illuminated spot by adjusting the size of the spot during the process. Gfeller's transceiver is based on scattered light reflection and not spot reflection. Thus, the proposed combination would alter Allen's principle of operation.

For the above reasons, there is no motivation to combine Allen and Gfeller.

The Office Action suggestion to use Allen in combination with Gfeller is improperly based on the hindsight of Applicants' disclosure. Such hindsight reconstruction of the art cannot be the basis of a rejection under 35 U.S.C. 103. The prior art itself must suggest that modification or provide the reason or motivation for making such modification. In re Laskowski, 871 F.2d 115, 117, 10 USPQ 2d 1397, 1398-1399 (CAFC, 1989). "The invention must be viewed not after the blueprint has been drawn by the inventor, but as it would have been perceived in the state of the art that existed at the time the invention was made." Sensonics Inc. v. Aerosonic Corp. 38 USPQ 2d 1551, 1554 (CAFC, 1996), citing Interconnect Planning Corp. v. Feil, 774 F. 2d 1132, 1138, 227 USPQ 543, 547 (CAFC, 1985).

For the reasons set forth above, it is submitted that the rejection of claims 1, 2, 9, 10, 12, 13 and 17 under 35 U.S.C. 103(a) is obviated by the amendment and should be withdrawn.

The Office Action rejects claims 3-5 and 14-16 under 35 U.S.C 103(a) as unpatentable over Allen in view of Gfeller and further in view of U.S Patent No. 5,497,269 to Gal, hereafter Gal.

This rejection is obviated by the amendment to claims 1 and 12, from which claims 3-5 and 14-16 depend, for the same reasons set forth above in the discussion of the rejection based on the combination of Allen and Gfeller. Gal, which was cited for a different purpose does not disclose or teach the transmitter or receiver recited in amended independent claims 1 and 12.

Allen, Gfeller and Gal, taken separately or in combination, also lack the grid of diffusing spots being formed via the emission from the transmitter of a plurality of collimated beams of equal intensity as recited in dependent claims 4 and 15.

For the reasons set forth above, it is submitted that the rejection of claims 3-5 and 14-16 under 35 U.S.C. 103(a) is obviated by the amendment and should be withdrawn.

The Office Action rejects claims 6 and 7 under 35 U.S.C 103(a) as unpatentable over Allen in view of Gfeller and further in view of U.S Patent No. 5,195,103 to Hinton et al., hereafter Hinton.

This rejection is obviated by the amendment to claim 1, from which claims 6 and 7 depend, for the same reasons set forth above in the discussion of the rejection based on the combination of Allen and Gfeller. Hinton, which was cited for a different purpose, does not disclose or teach the receiver recited in amended independent claim 1 or the transmitter recited in these claims as discussed below.

The Examiner admits that the combination of Allen and Gfeller lacks a transmitter comprising a light source, collimating optics and a spot array generator, but contends that Hinton supplies this deficiency. Hinton discloses a modulated laser source for spot array illumination. Hinton's modulated laser source produces an array of collimated beams that are imaged by a lens 26 onto an array of photosensitive devices 28. Thus, Hinton images the collimated beams directly on photosensitive devices 28, unlike Allen and Gfeller in which the light is reflected to the receiving elements. The proposed combination of Allen, Gfeller and Hinton would in some way image the beams directly onto the receiving elements. This combination lacks projection of the beams as an array of diffusing spots on a reflecting surface as recited in amended independent claim 1 from which claims 6 and 7 depend. Thus, the rejection does not apply to claims 6 and 7.

In addition, there is a lack of motivation to combine Hinton with Allen and Gfeller. Hinton would change the principle of operation of Allen/Gfeller from reflecting surfaces to direct imaging onto the receiving elements. See M. P. E. P., Section 2143.01 VI.

For the reasons set forth above, it is submitted that the rejection of claims 6 and 7 under 35 U.S.C. 103(a) is obviated by the amendment and should be withdrawn.

The Office Action rejects claim 8 under 35 U.S.C 103(a) as unpatentable over Allen in view of Gfeller and further in view of U.S Patent No. 5,686,722 to Dubois et al., hereafter Dubois.

This rejection is obviated by the amendment to claim 1, from which claim 8 depends, for the same reasons set forth above in the discussion of the rejection based on the combination of Allen and Gfeller. Dubois, which was cited for a different purpose, does not disclose or teach the receiver or the transmitter recited in amended independent claim 1.

For the reasons set forth above, it is submitted that the rejection of claim 8 under 35 U.S.C. 103(a) is obviated by the amendment and should be withdrawn.

The Office Action rejects claim 11 under 35 U.S.C 103(a) as unpatentable over Allen in view of Gfeller and further in view of U.S Patent No. 5,293,272 to Jannson et al., hereafter Jannson.

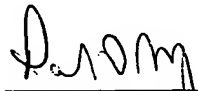
This rejection is obviated by the amendment to claim 1, from which claim 11 depends, for the same reasons set forth above in the discussion of the rejection based on the combination of Allen and Gfeller. Jannson, which was cited for a different purpose, does not disclose or teach the receiver or the transmitter recited in amended independent claim 1.

For the reasons set forth above, it is submitted that the rejection of claim 11 under 35 U.S.C. 103(a) is erroneous and should be withdrawn.

It is respectfully requested for the reasons set forth above that the objection to the drawing be withdrawn, that the rejections under 35 U.S.C. 103(a) be withdrawn, that claims 1-17 be allowed and that this application be passed to issue.

Respectfully Submitted,

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APPENDIX A